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Clustering, lensing, and ISW-RS from the DEMNUni neutrino simulations

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I will present the first set of cosmological simulations produced within the “Dark Energy and Massive Neutrino Universe”(DEMNUi) project. These simulations are characterized by $L=2$ Gpc/h, $N_{\text{part}}=2 \times 2048^3$, a baseline LCDM-Planck cosmology, and four different total neutrino masses, $M_{\text{nu}}=0, 0.17, 0.3, 0.53$ eV, with a degenerate mass spectrum. They are the largest N-body simulations to date with a massive neutrino component treated as an additional particle type. I will present fully non-linear effects in the presence of massive neutrinos, extracted from the DEMNUi simulations, and show how neutrino free-streaming alters not only LSS clustering and lensing, but introduces also an excess of power in the ISW/RS signals, and related cross-correlations, at intermediate scales.

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